

Armed Forces College of Medicine

AFCM







THE FACE

BY
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Intended learning outcomes:

e end of this lecture ,the student should be able to:

1) Describe the three important muscles of face (orbicularis oris, orbicularis oculi & buccinator with action and nerve supply of all 3 muscles & the attachments of buccinator only).

Enumerate the vessels & nerves supplying (2 the face with special emphasis on sites to feel .arterial pulse

Comment on the clinical significance of the (3 .dangerous area of the face

KEY POINTS OF THE LECTURE

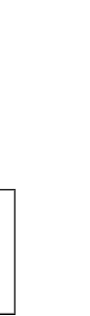
1) Action and nerve supply of orbicularis oris, orbicularis oculi & buccinator
2) Motor and sensory nerves supplying the face
3) Blood supply of the face
4) Sites to feel arterial pulsation of facial artery and superficial temporal artery
5) Dangerous area of the face

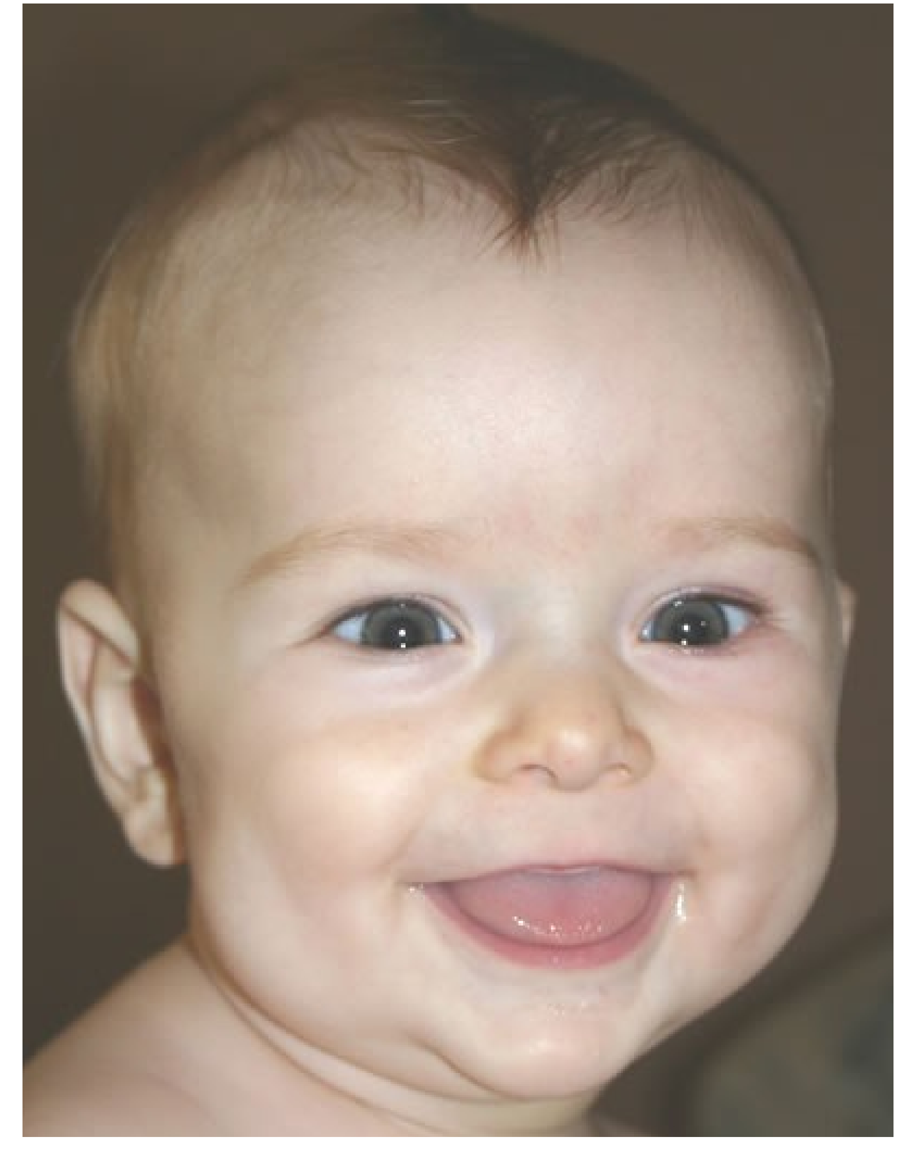
Layers of the face:

1- Skin: has rich blood supply (rapid healing)

2- Superficial fascia : contains muscles, vessels and nerves of the face

3- No deep fascia in most of the face (to allow for facial expressions)





Muscles of the face (muscles of facial expression)



are characterized by :

1- Present in the superficial fascia

2- Arranged around orifices (openings)

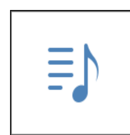
3- May have bony origin ,but insert into the skin

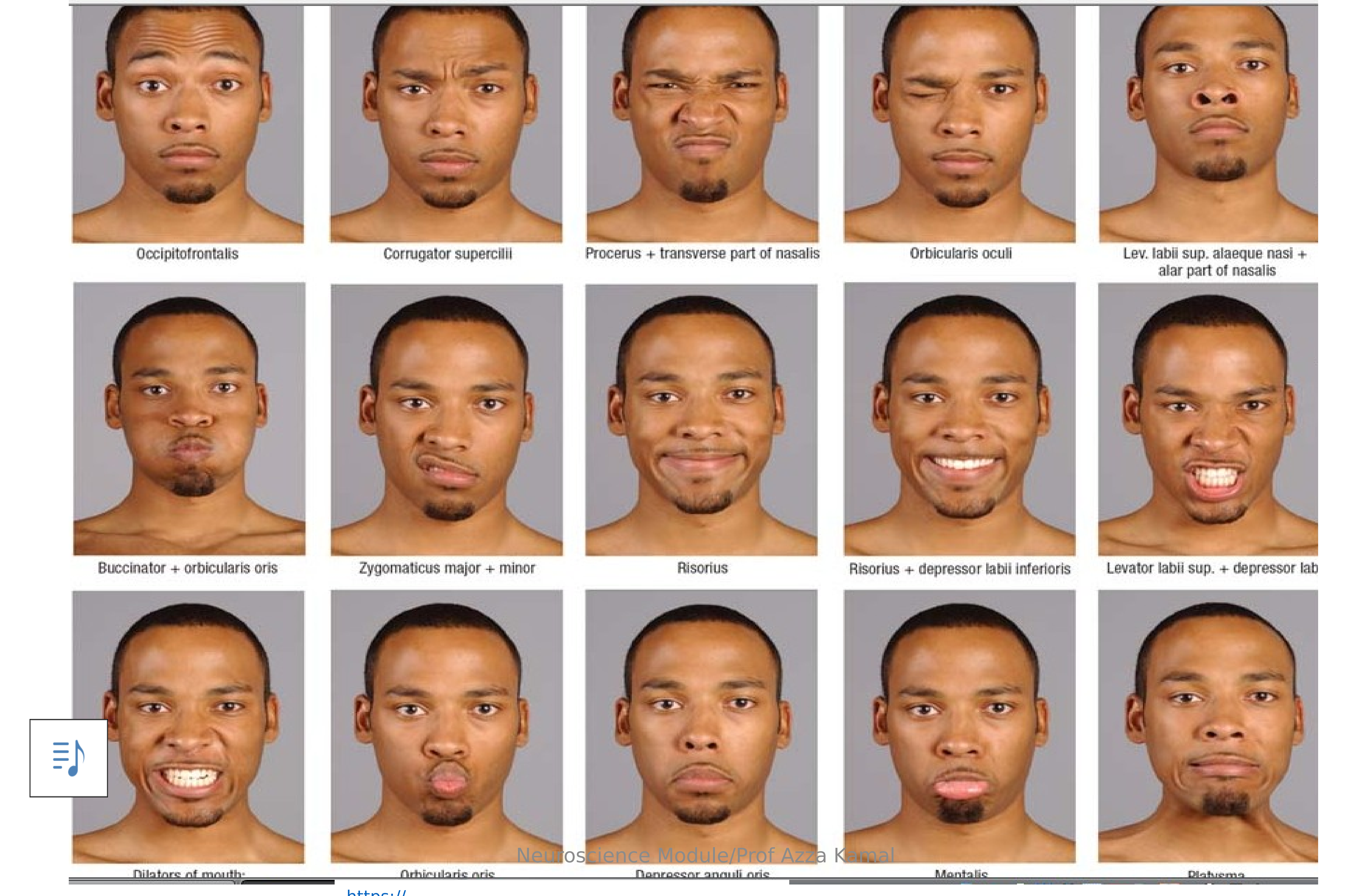
4- Supplied by facial nerve

5- Produce the different facial expressions

Muscles of facial expression

are all supplied by the facial nerve VII





Occipitofrontalis
Corrugator supercilii
Procerus + transverse part of nasalis
Orbicularis oculi
Lev. labii sup. alaeque nasi + alar part of nasalis
Buccinator + orbicularis oris
Zygomaticus major + minor
Risorius
Risorius + depressor labii inferioris
Levator labii sup. + depressor lab
Dilators of mouth:
Orbicularis oris
Depressor anguli oris
Mentalis
Platysma

https://

Three important muscles of the face:

1) Orbicularis oculi

musclesused.com

Levator Anglui Oris Muscle

Ptergomandibular Raphe

3) Buccinator Muscle

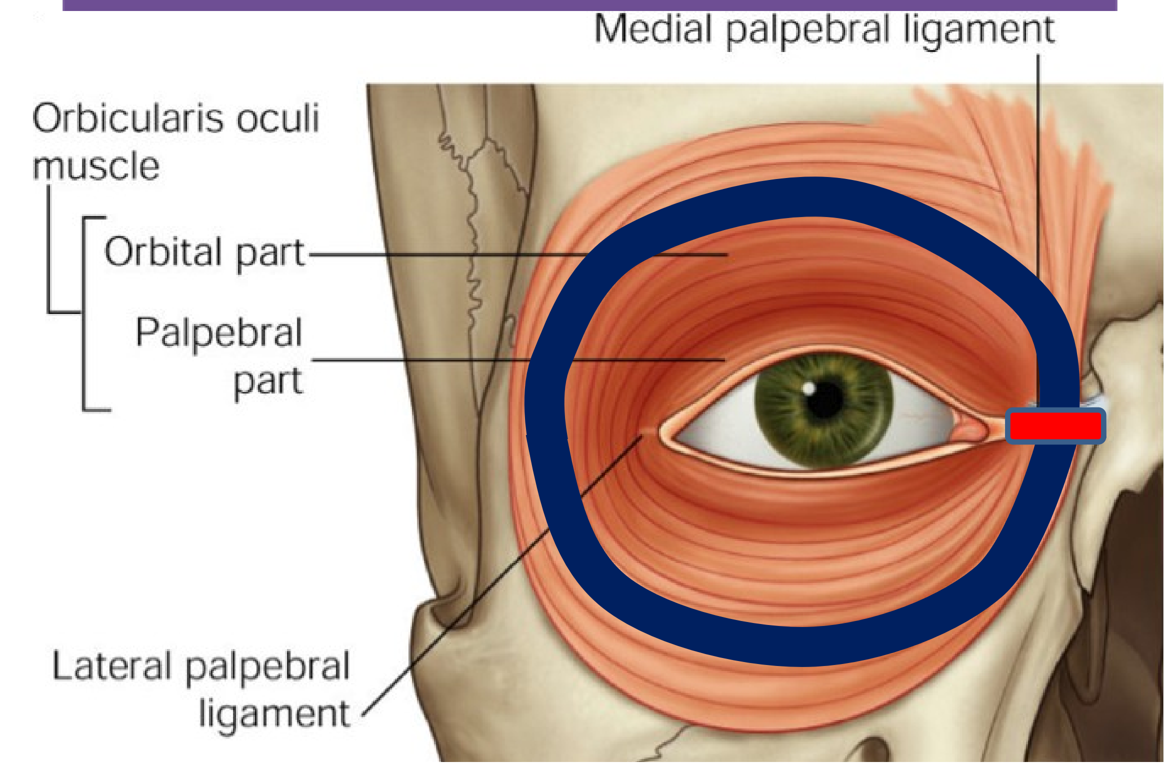
Orbicularis Oris Muscle

https://lh3.googleusercontent.com/DSK3wHYtL4ePowPJ

2) Orbicularis

Frank H. Netter
Atlas of Human Anatomy
6th edition

ORBICULARIS



https://www.google.com.eg/search?sa=G&hl=en-EG&q=muscles+of+the+eyelid



It is the sphincter muscle of eyelids encircling the orbit.

It has 3 parts:

1. **Orbital part**
2. **Palpebral part**
3. **Lacrimal part**

1) Orbital part encircles orbital opening closes eyelids tightly to protect it against strong light & dust etc…..



2) Palpebral part

closes eyelids gently as in blinking & sleeping

Medial palpebral ligament

Orbicularis oculi muscle

Orbital part

Palpebral part

Lateral palpebral ligament

https://www.google.com.eg/search?sa=G&hl=en-EG&q=muscles+of+the+eyelid

IDENTIFY THE MUSCLE IN ACTION





A



B

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Palpebral part of orbicularis oculi

Orbital part of orbicularis oculi

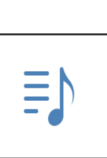


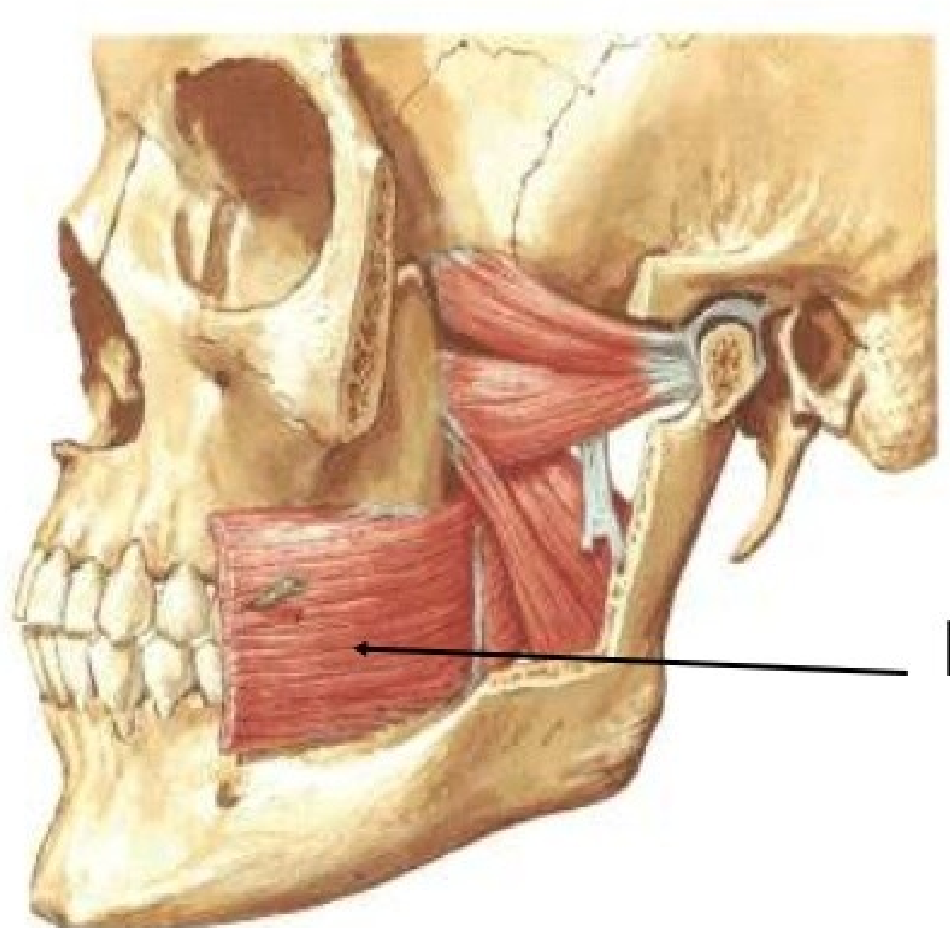
3) Lacrimal Part : its fibers attach to the fascia surrounding the lacrimal sac dilates lacrimal sac to help flow of tears

Lacrimal gland

Lacrimal sac

https://www.google.com.eg/search?sa=G&hl=en-EG&q=lacrimal+gland+sac





Buccinator

Frank H. Netter
Atlas of Human Anatomy
6th edition



Parotid duct (cut)

tor

Buccinator muscle

Pterygomandibular raphe

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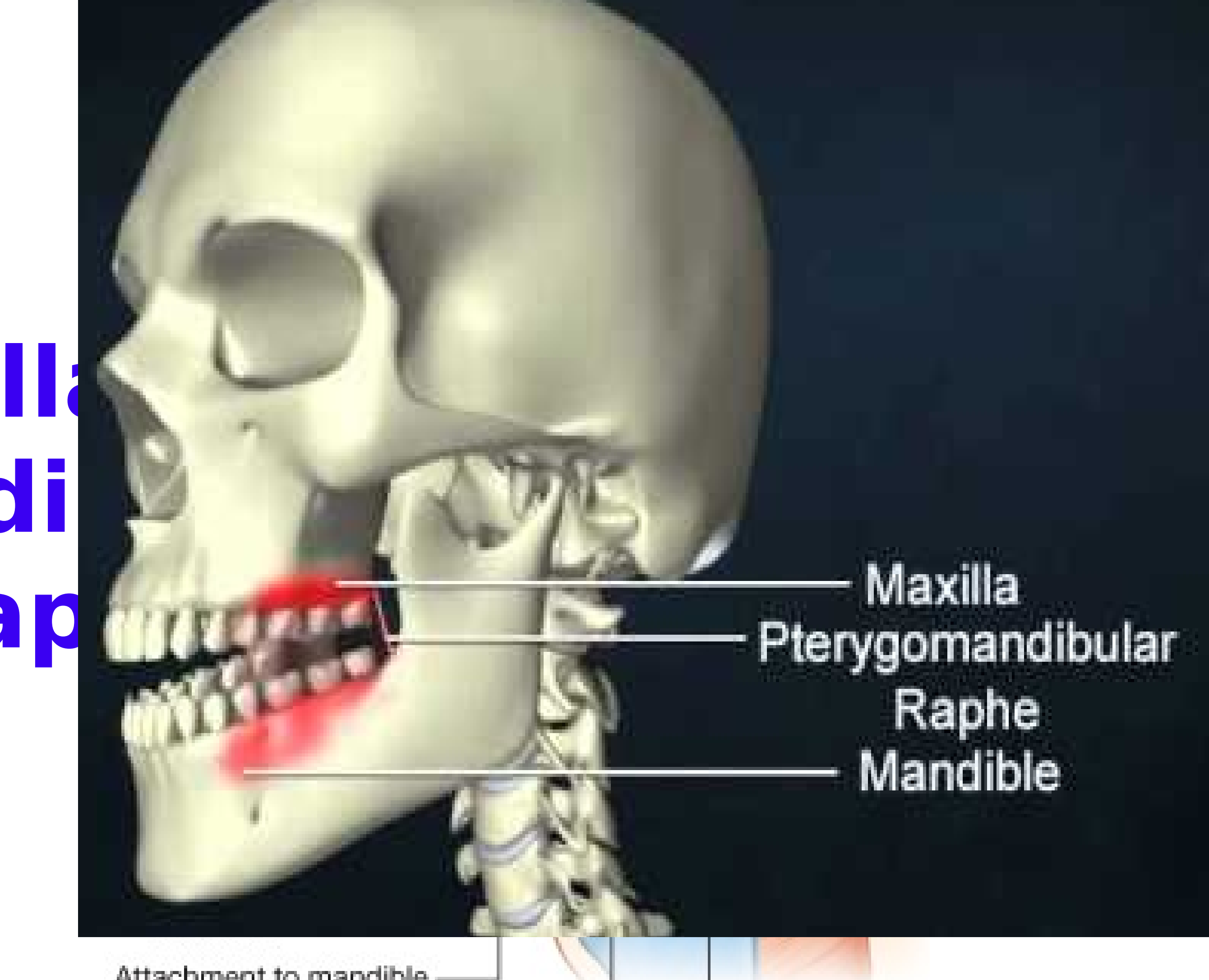
Superior pharyngeal constrictor muscle

uccinator Origin:

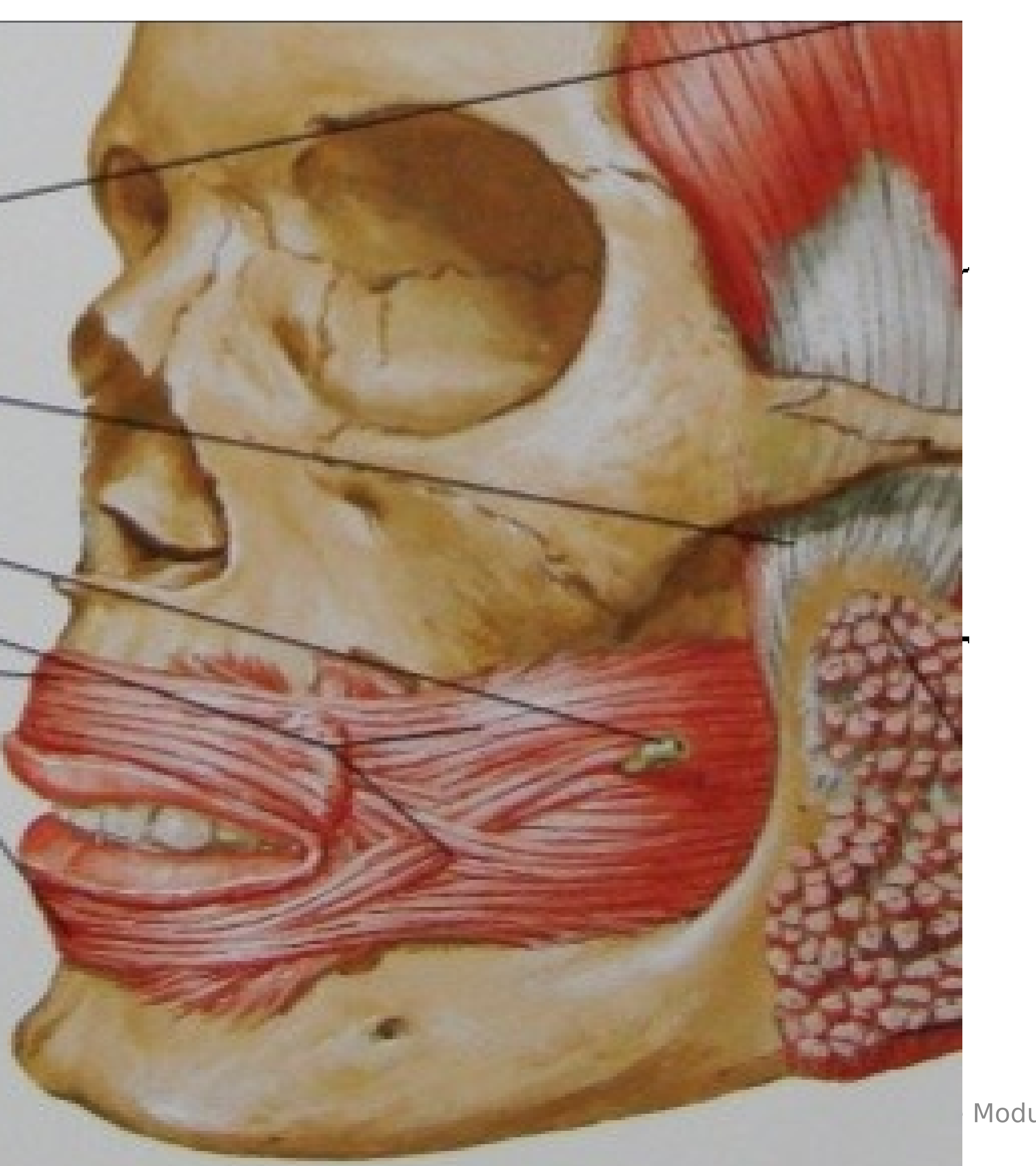
veolar margin (maxilla

veolar margin (mandi

terygo-mandibular rap



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Insertion:

- **Upper fibers: into upper lip**
- **Lower fibers: into lower lip**
- **Middle fibers: decussate at modiolus (angle of mouth)so that their upper part goes to lower lip and thei**

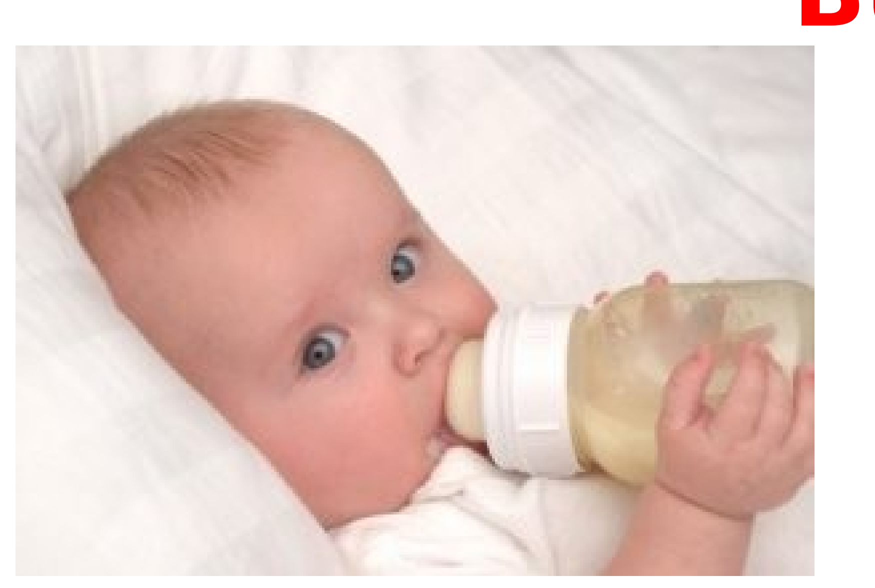

Buccinator muscle.mp4

Action of buccinator :

- Used in suckling ,whistling & blowing of air
- Compress cheek against teeth so prevents accumulation of food in vestibule of mouth. If buccinator is



Action of Buccinator



Suckling

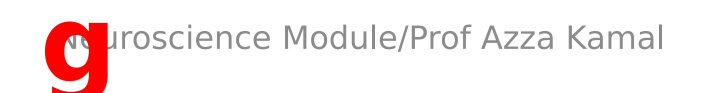


Whistlin
g



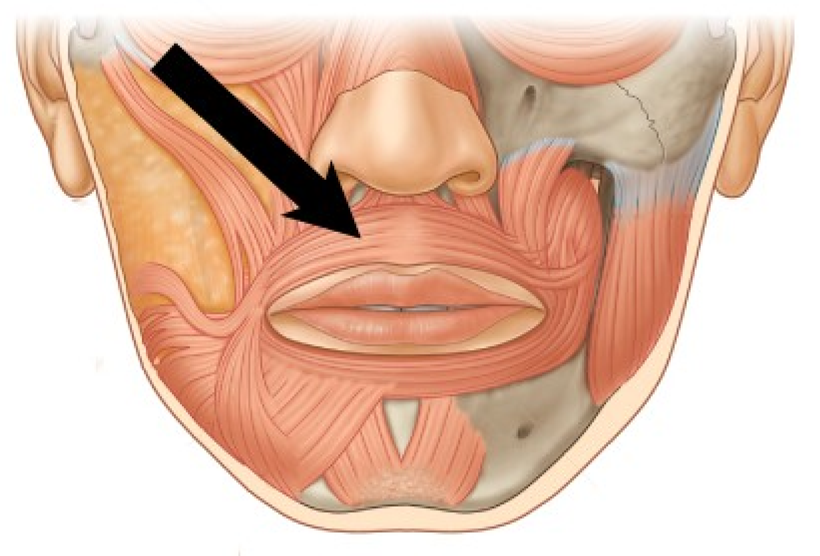
Blowing





Action of orbicularis oris:

- Close lips
- Used in speech

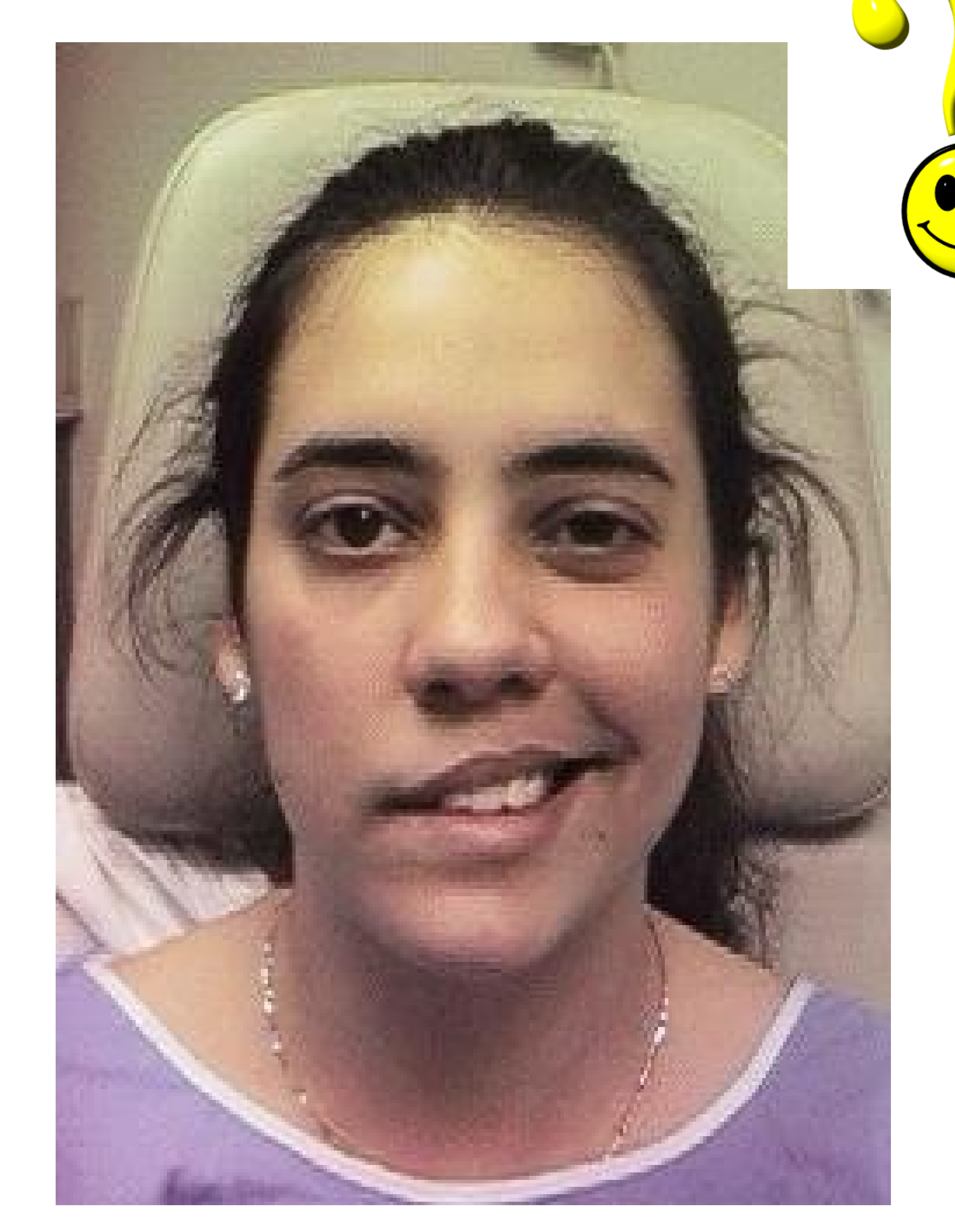


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- **A 16-years- old girl visited her physician after noticing asymmetry of her face. The girl then noticed that the right side of her face felt weak & she could no longer whistle for her dog.**
- **Which nerve was most likely affected?**
- **How can you test for its injury ?**
- **Why couldn't she whistle for her dog? (Which muscle was affected)?**

Testing action and nerve supply of orbicularis oris & buccinator



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Nerve Supply of Face

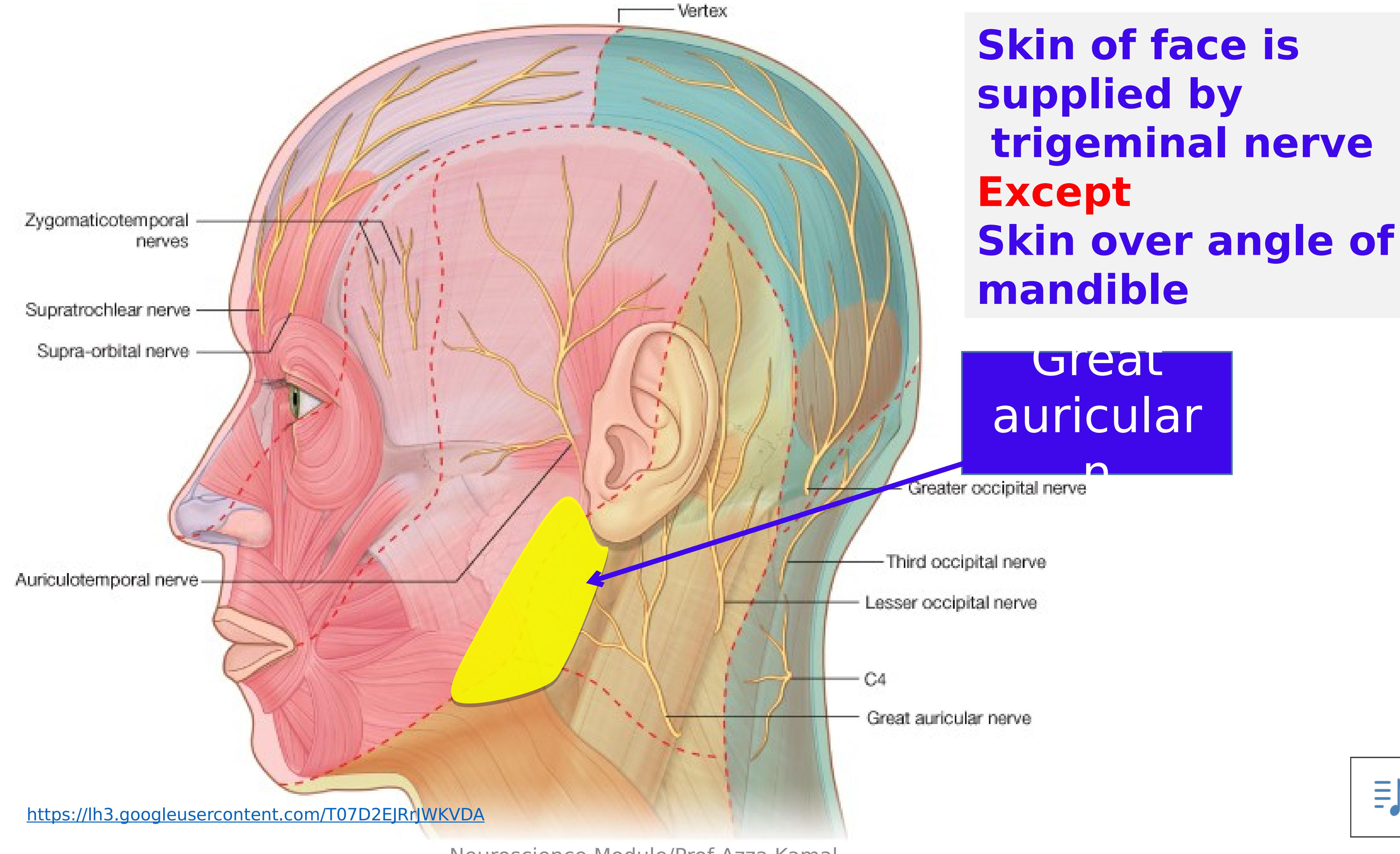
Sensory

- Trigeminal for skin of All Face, Except
- Skin over angle of mandible Great Auricular nerve

Motor

- Facial Nerve supplies all muscles of face

Skin of face is supplied by trigeminal nerve Except Skin over angle of mandible



https://lh3.googleusercontent.com/T07D2EJRrJWKVDA

Sensory nerve supply of face

By branches of trigeminal

Ophthalmic division

1-supratrochlear
2-supraorbital
3-palpebral br. of lacrimal
4-infratrochlear
5-external nasal

Maxillary division

1-zygomaticofacial
2-zygomaticotemporal
3-infraorbital

Mandibular division

1-mental
2-buccal
3-auriculo-temporal

Ophthalmic division

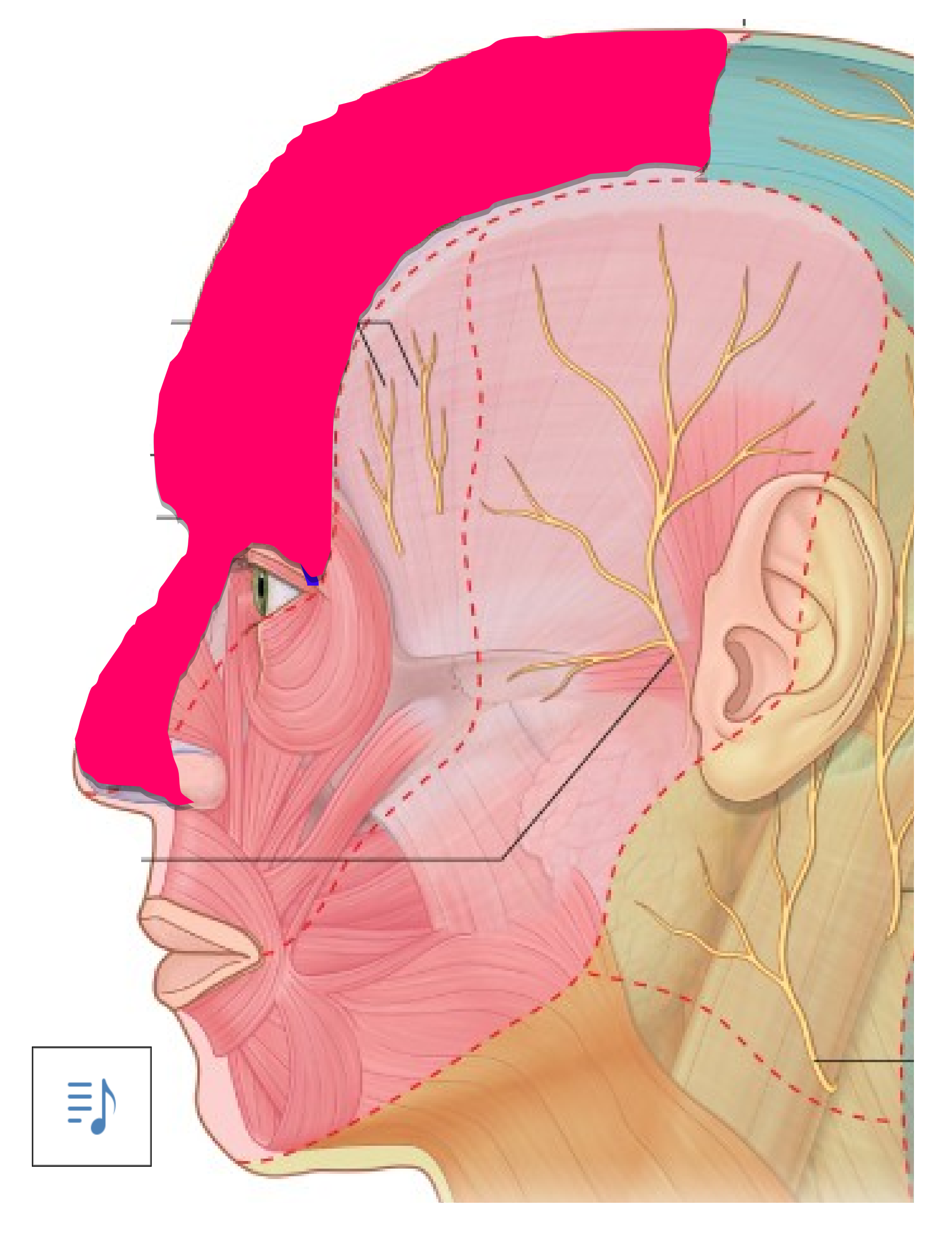
1-Supratrochlear □ upper eyelid, forehead & scalp

2-Supraorbital □ upper eyelid, forehead & scalp

3-Palpebral br of lacrimal □ lat. part of upper eyelid

4-Infratrochlear □ medial parts of eyelids & upper part of nose

5-External nasal □ lower part of nose close to median plane



Maxillary division

1-Zygomaticofacial

skin on prominemce of cheek
(over zygomatic bone)

2-Zygomaticotemporal

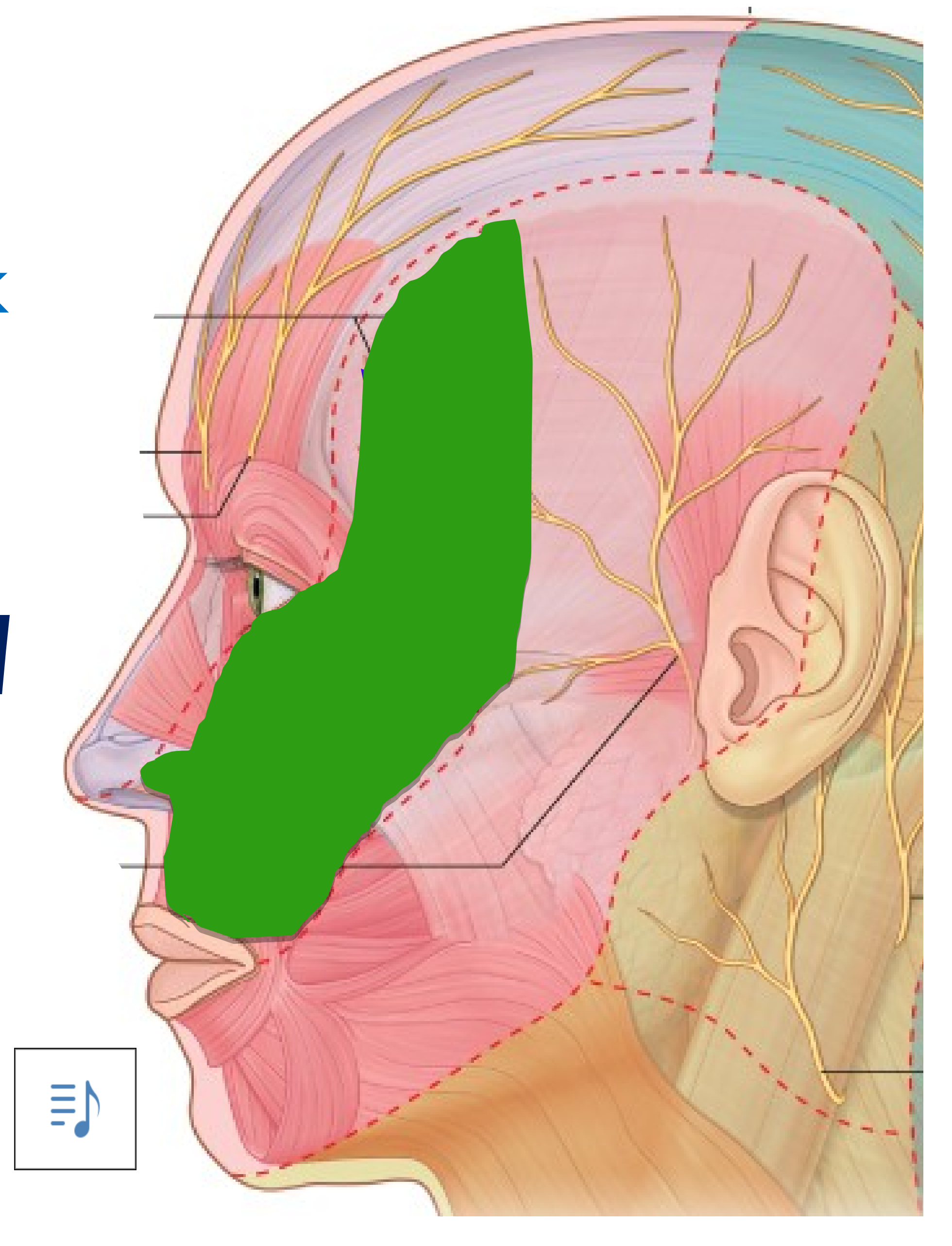
 skin of temple

3-Infraorbital 3 branches:

a) **Palpebral** to lower eyelids

b) **Nasal** to side & ala of nose

c) **Labial** to upper lip

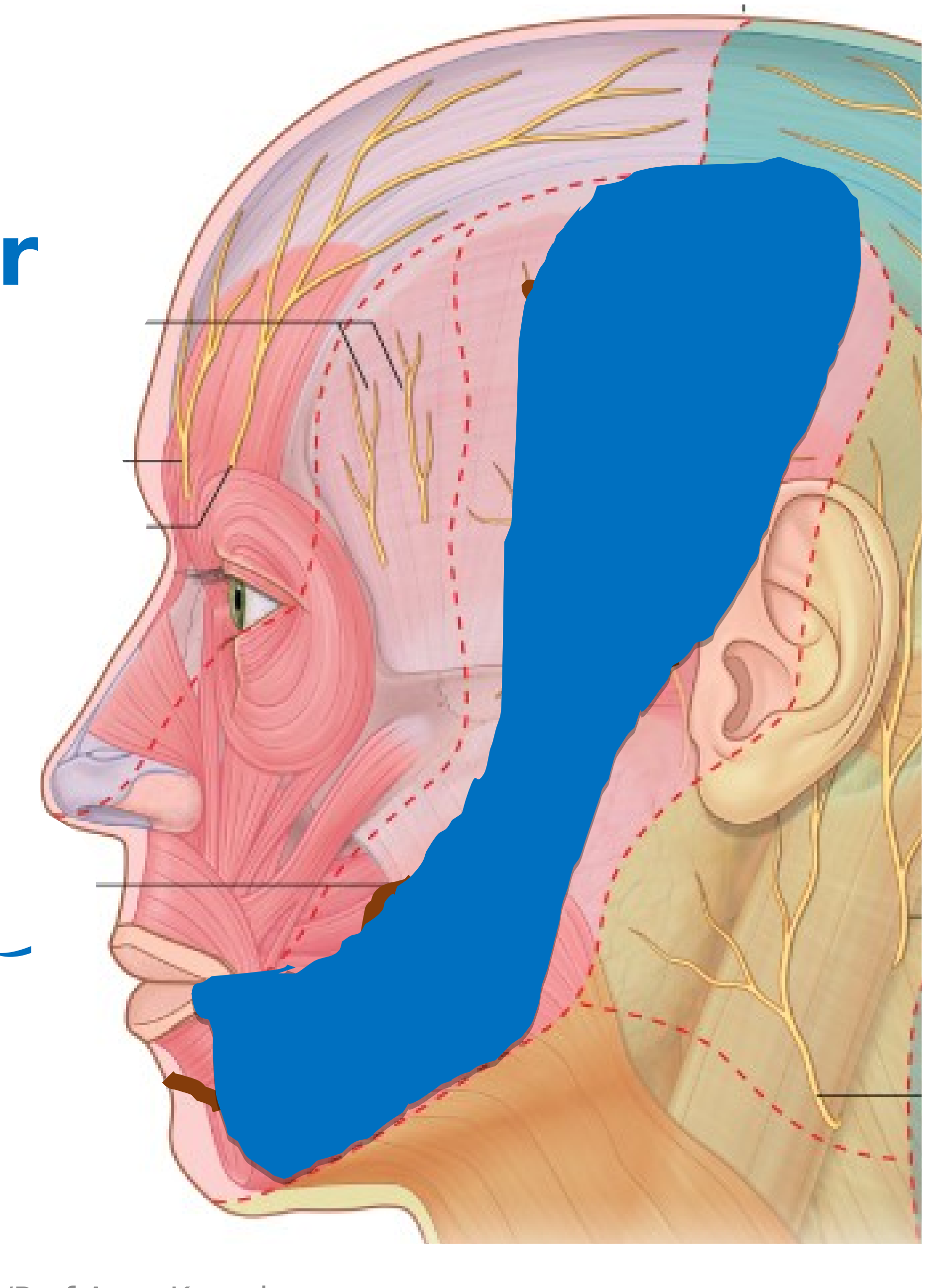


Mandibular division

1- Mental skin of lower lip & chin

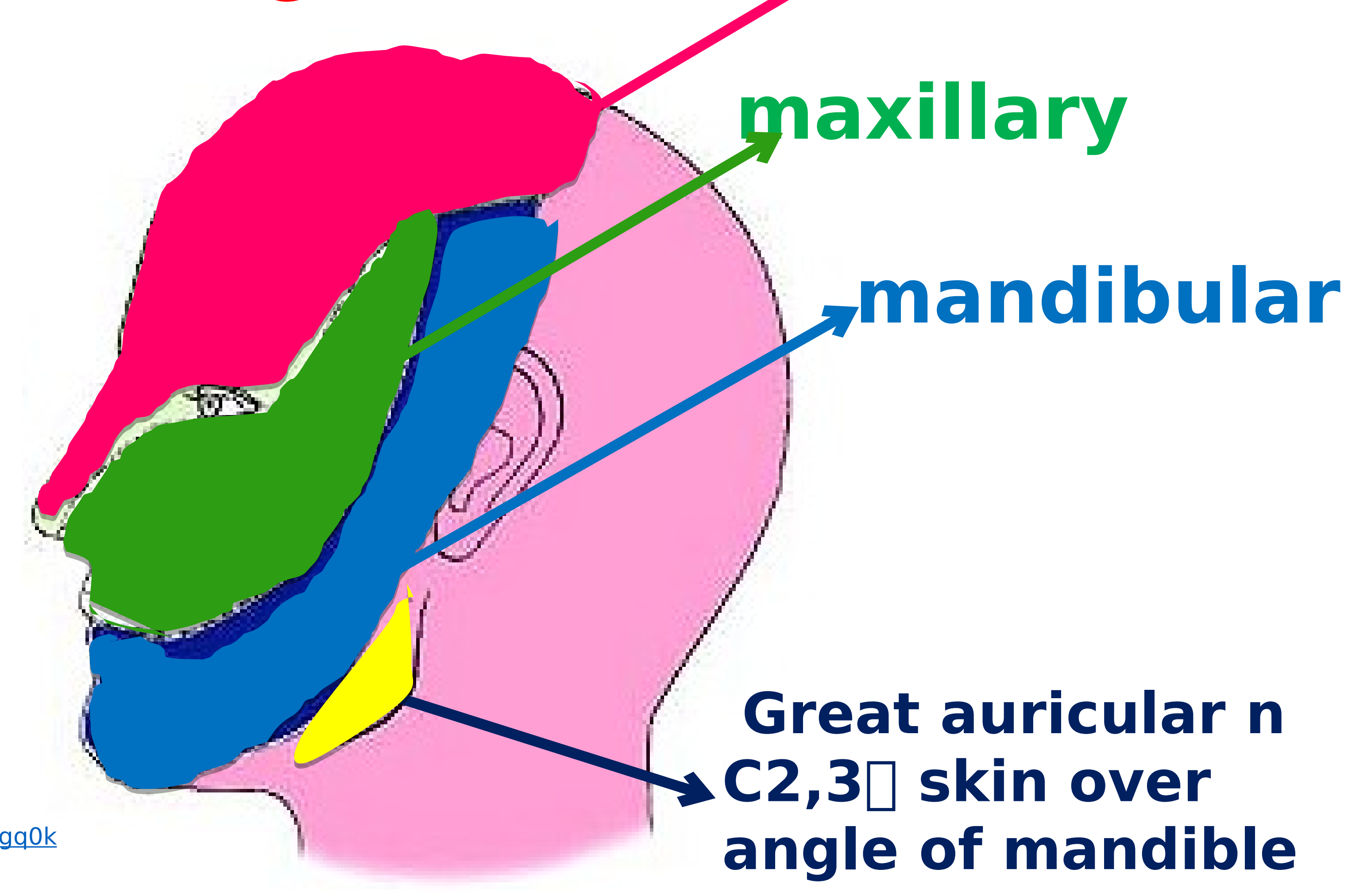
2- Buccal skin over buccinator

3- Auriculotemporal skin over auricle & temple



nsory nerve supply of face

Trigeminal



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A doctor uses a cotton bud to touch the skin of the lower eyelid of the patient. Which nerve is the doctor testing?

a) Zygomaticofacial
b) Zygomaticotemporal
c) Infraorbital
d) Supratrochlear
e) Supraorbital



MCQ tests motor and sensory nerves supplying the face.

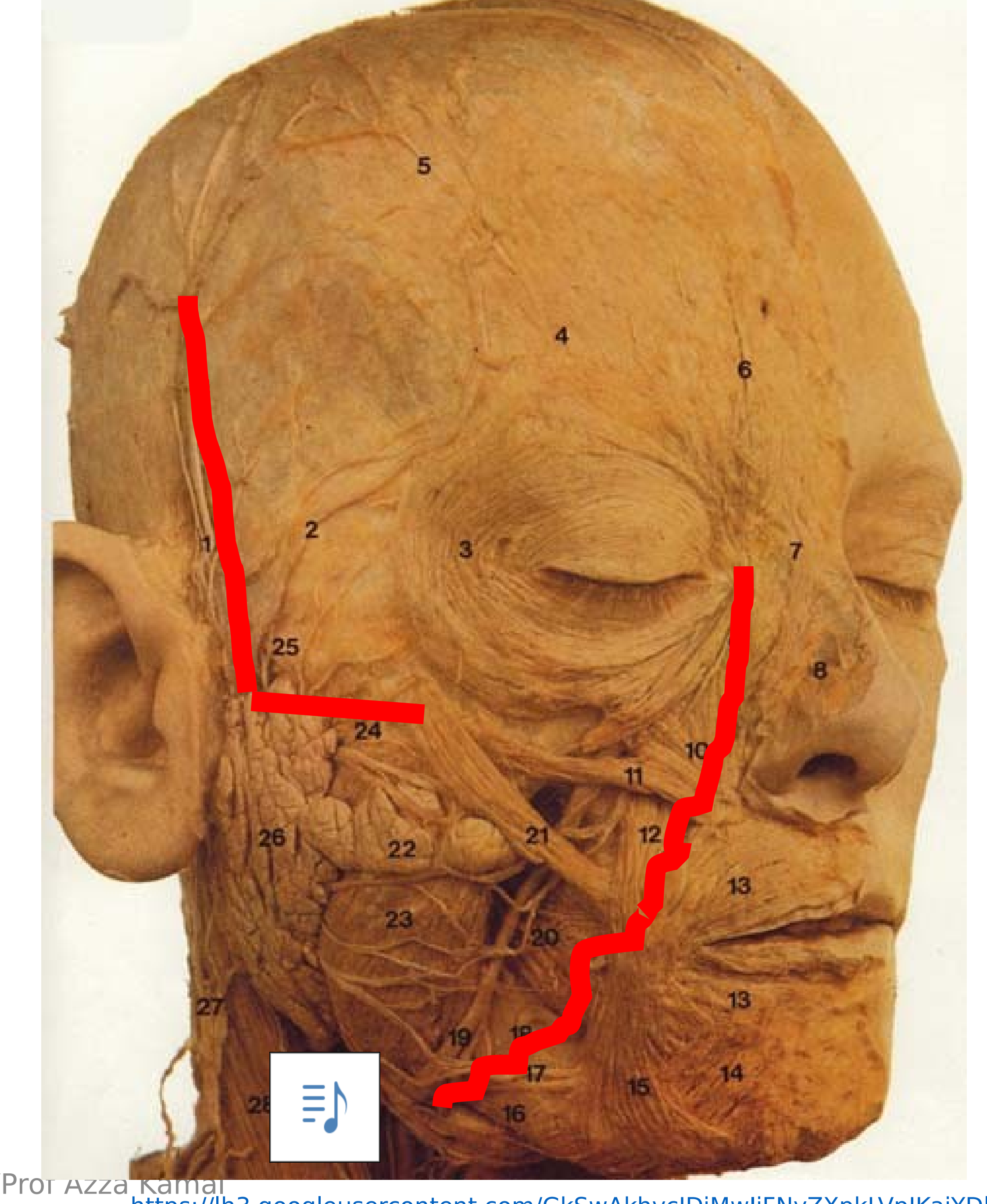
Arterial supply of face

Mainly by :

1) Facial artery

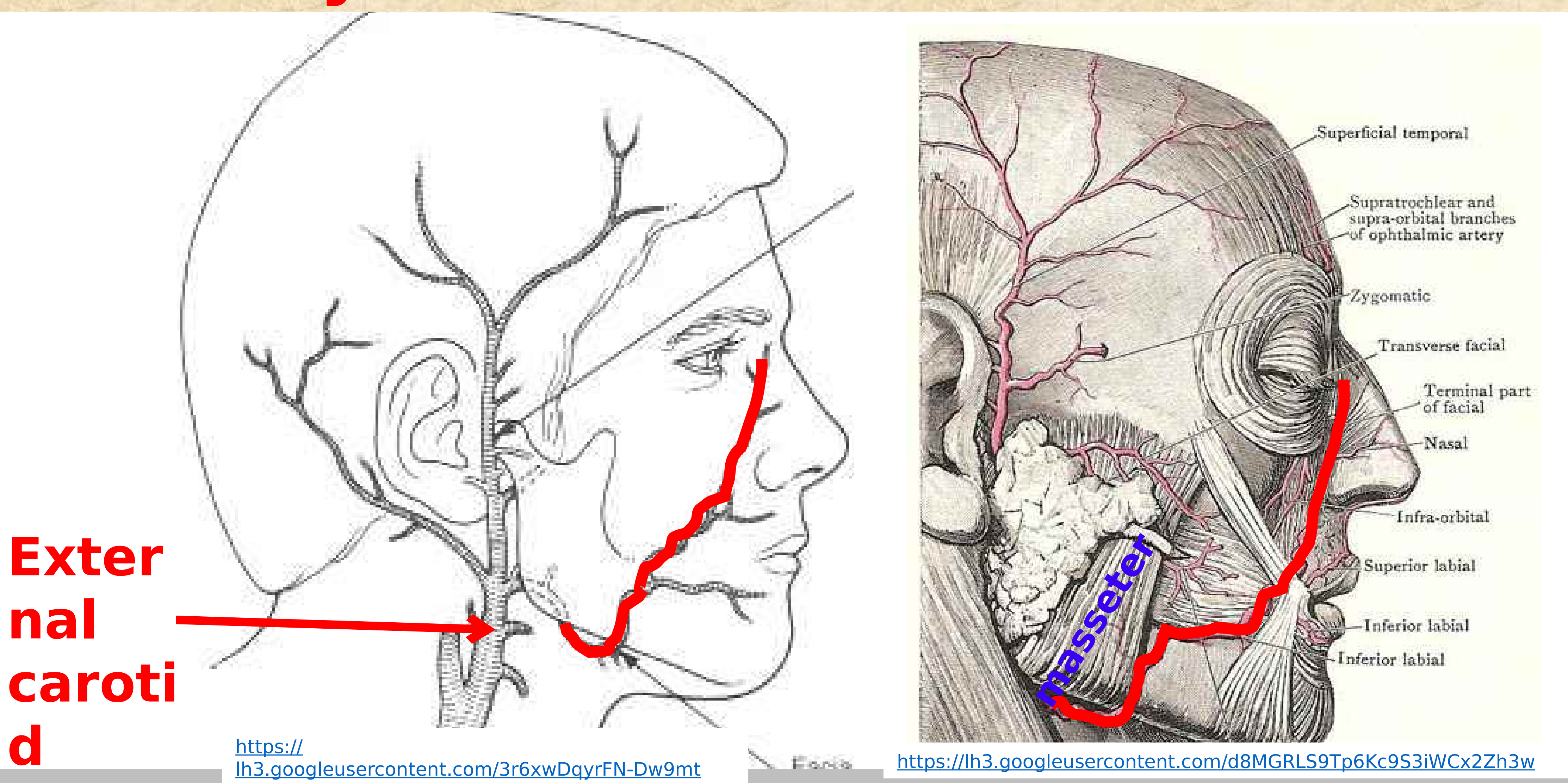
2) Superficial temporal artery & its transverse facial branch

Superficial temporal is one of the two terminal branches of External Carotid artery



https://lh3.googleusercontent.com/GkSwAkhvcJDjMwIjFNyZXpkLVpJKajYDlfbYW

cial artery is branch of external carotid artery



https://lh3.googleusercontent.com/3r6xwDqyrFN-Dw9mt

https://lh3.googleusercontent.com/d8MGRLS9Tp6Kc9S3iWCx2Zh3w

Enters face by winding around lower border of mandible at antero- inferior angle of masseter muscle

Ascends in a tortuous course to the medial angle

Branches :

1. **Inferior labial**
2. **Superior labial**
3. **Lateral nasal**



Facial artery

https://lh3.googleusercontent.com/3r6xwDqyrFN-Dw9mt



https://www.google.com.eg/search?sa=G&hl=en-EG&q=facial+pulse

Superficial temporal artery pulse is felt against zygomatic arch in front of tragus



https://lh3.googleusercontent.com/MAiOS0X19acasDuT4Re

Facial artery pulse is felt against lower border of mandible at antero-inferior angle of masseter



Zygomatic arch

https://
www.google.com.eg/search?hl=en-EG&q=ginglymoarthrodial

Main arteries supplying the face are:
Facial artery & superficial temporal artery branches from external carotid +

n ophthalmic artery of internal carotid supratrochlear, rbital & dorsal nasal

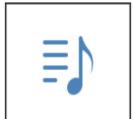
2) From maxillary artery infraorbital, buccal & mental

Infra orbital

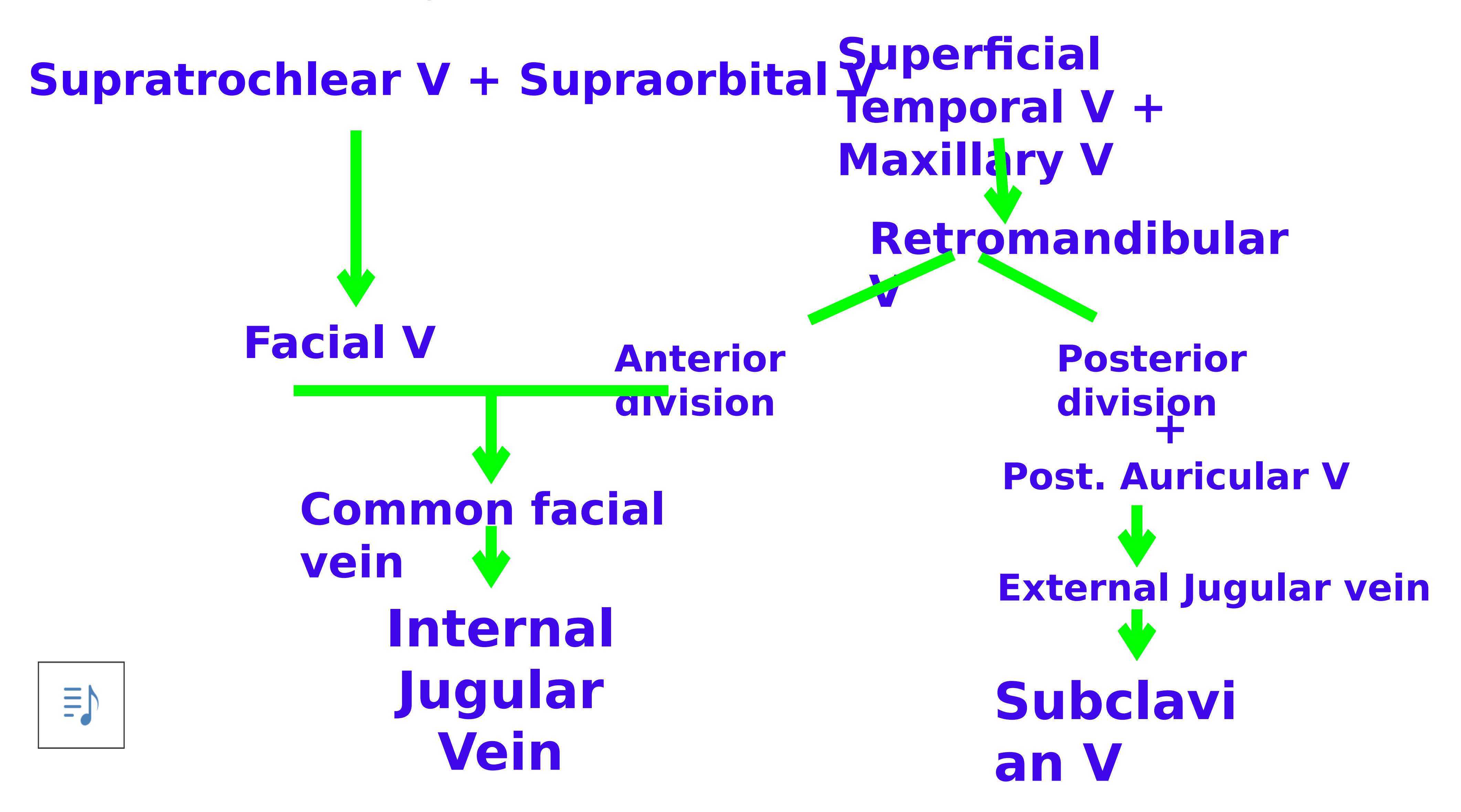
buccal

mental

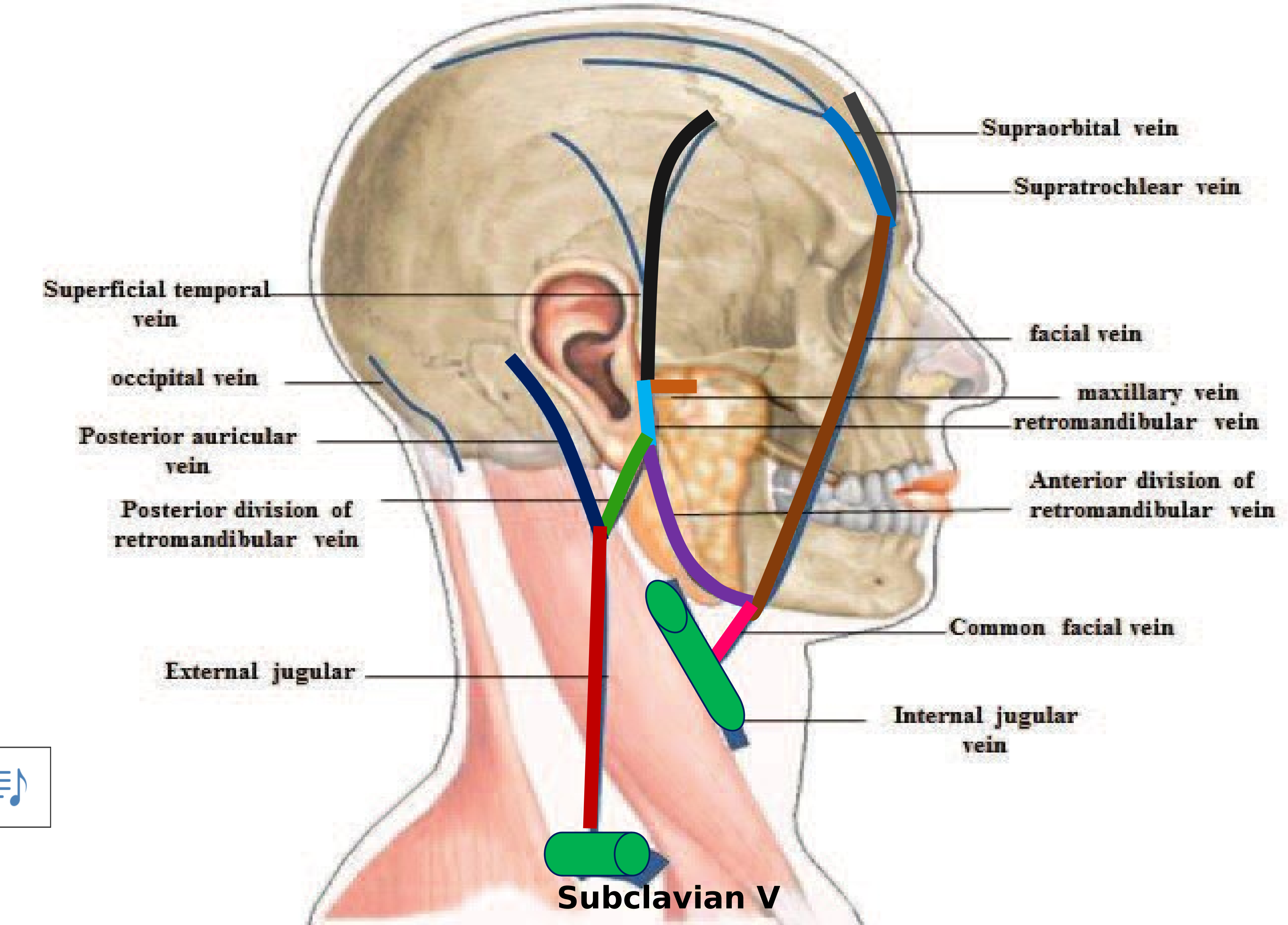
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Venous drainage of scalp and face



Venous drainage of the face & scalp



Facial vein

It is connected with cavernous sinus via 2 routes:

a) Facial vein is connected to superior ophthalmic vein which drains in the cavernous sinus.

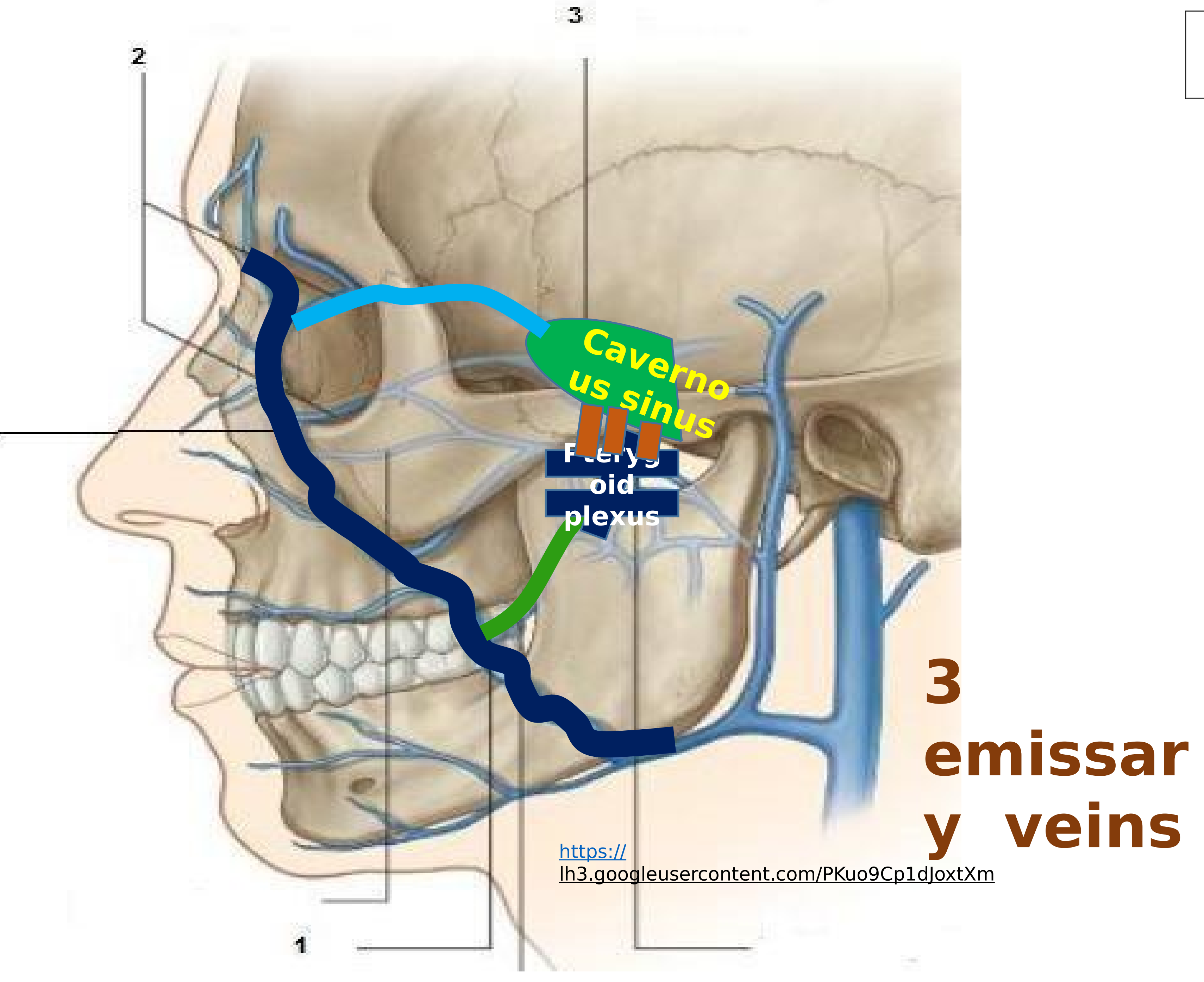
b) Facial vein is connected to pterygoid venous plexus via the deep facial ve .

Pterygoid venous plexus is connected to cavernous sinus via 3 emissary

Superior ophthalmic vein

Facial vein

Deep Facial vein



3 emissary veins

A doctor feels the pulse of an artery against the lower border of the mandible at the antero-inferior angle of masseter. This is the pulse of which of the following arteries?

a) External carotid
b) Superficial temporal
c) Infraorbital
d) Lingual
e) Facial

MCQ tests blood supply of the face.

Dangerous area of face includes:

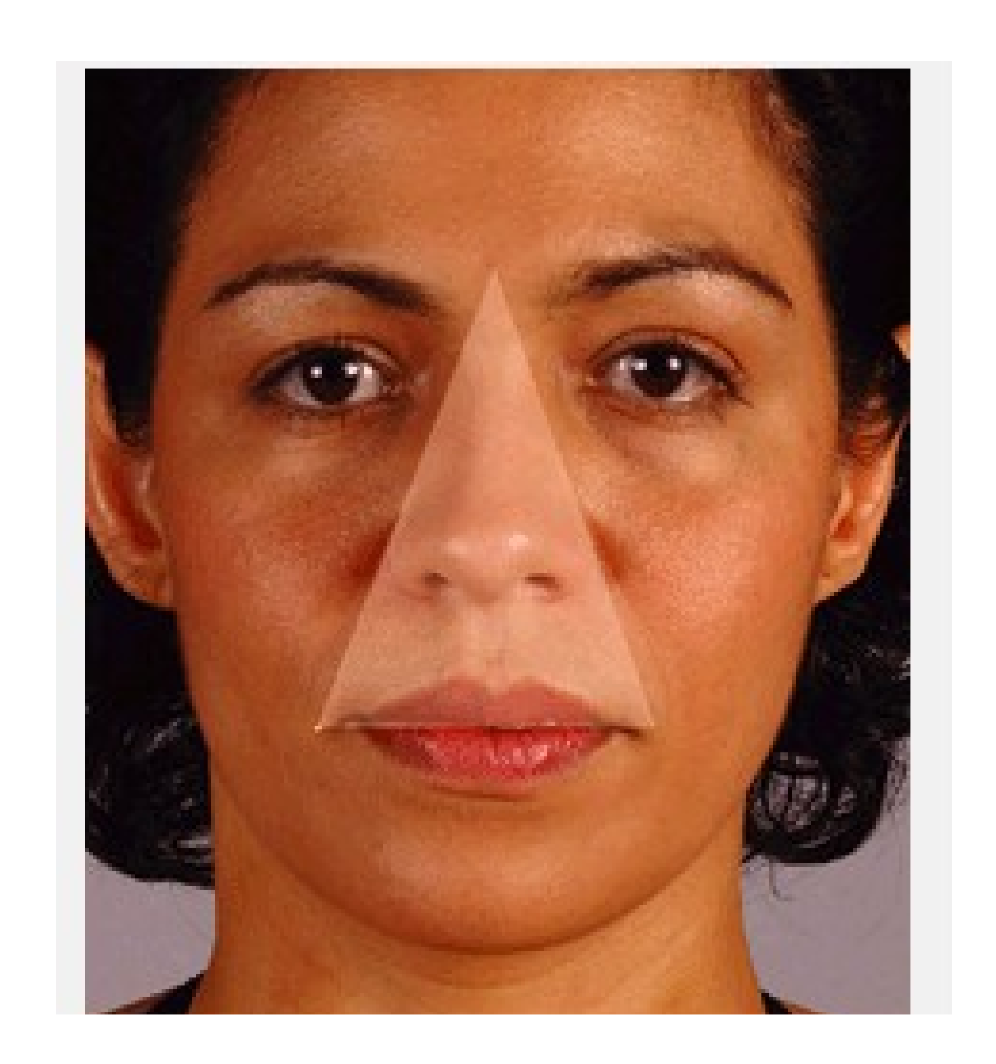
1) **Upper lip**
2) **Nose**
3) **Medial angles of eyes**

If this area becomes infected □ infection

ne



Never squeeze an abcess in the dangerous area of the face



Dangerous area of face

Short Essay Questions

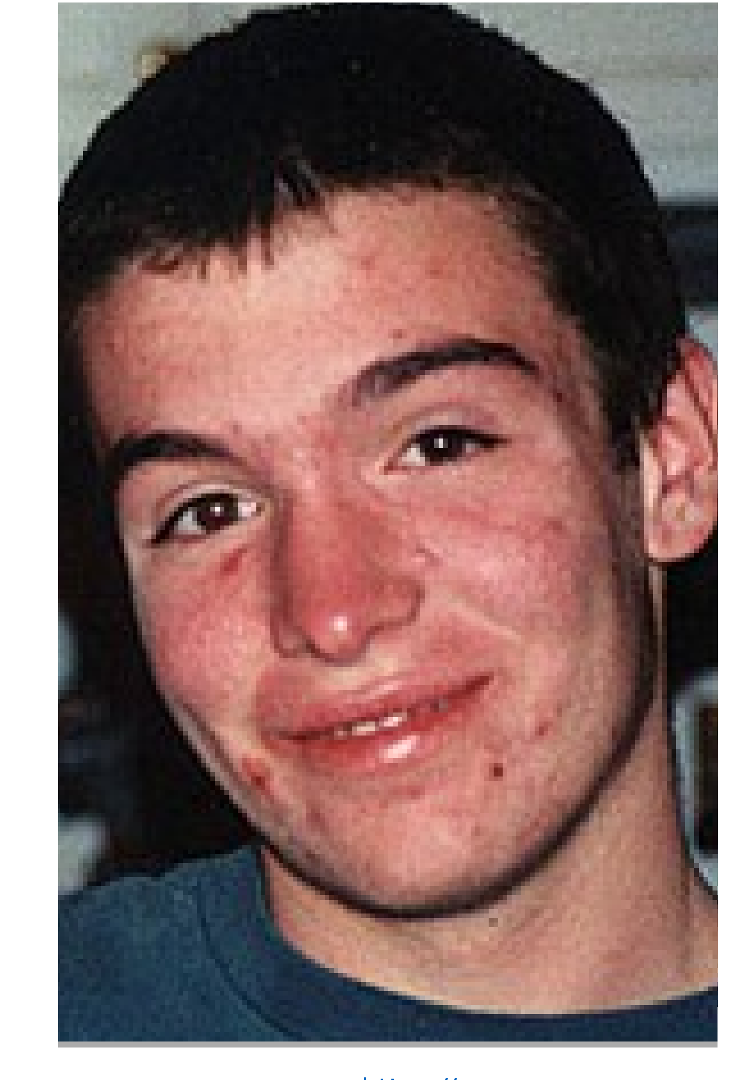
W ous area of the face?

Which vein drains this area?

Why shouldn't an infection in the dangerous area be squeezed ?



How can infection reach



https://lh3.googleusercontent.com/vb2i83Hi32XTVisgDHMearwThW30

Testing the dangerous area of the face





References: Gray's Anatomy for students

Face : 1) Muscles P. 856-857

2) Nerves P. 865-868

3) Vessels P. 869-871